COSC345
A Lapse in Logic
Tuesday 2015.04.21
The most important programmer’s tool
It’s your own mind

- So learn how to use it effectively.
- Like Terry Pratchett’s Tiffany Aching, you need First Sight and Second Thoughts.
- See what’s really there (not just expect)
- Think critically about your own thinking
Biases in our thought


• and other such material
Example one

- If solution X is good for problem Y
- and I do not have problem Y
- then solution X is no use to me
An instance of that

- Water is good if you are dying of thirst
- I am not dying of thirst
- Therefore there’s no point in me drinking
Another instance

- TypeScript (or Dart) is useful for large projects (many lines, several programmers)
- I do not have a large project
- Therefore TypeScript (or Dart) has nothing to offer me.
- About half of you had this thinko.
Example two

- I could choose method X or method Y
- Method X costs more in phase 1
- Therefore I should choose method Y to save on whole-project costs
An instance

• I need to travel around the world.
• It is cheaper to take a bus from here to Christchurch than to fly
• Therefore I have decided to use only buses in my whole trip
Another instance

- I could use TypeScript (or Dart) or raw JavaScript.
- It will take longer to learn all of TypeScript (or Dart) than all of JavaScript.
- Therefore I shall use raw JavaScript in order to reduce the total project time.
The illicit only

• You read “X is good for Y” as “Y is the only thing X is good for”

• You read “it takes longer to learn X than Y” as “and learning time is the only time that can be affected by the choice”

• Both of these are wrong.
The greatest treason

- “The last temptation is the greatest treason, to do the right thing for the wrong reason.” T.S. Eliot, *Murder in the Cathedral.*

- Maybe you made the right decisions. But reasoning this way, your decisions may betray you. Errors of logic are as dangerous as errors of fact.